have 20mm "Gatling" guns, and AH-64s carry 30mm chain guns). An infantry leader should be familiar with these weapons, their capabilities, and the sighting systems used to control them. Otherwise, he may plan for missions and assign tasks that exceed the capabilities of the aircraft available. For example, he might plan a SEAD using AH-1F helicopters at night against a mechanized threat system (ZSU 57-2, SA-9) that has a large thermal signature. Knowing the enemy should be engaged at the maximum possible range, he plans for a four- to eight-kilometer Hellfire shot. When he takes his plan to the aviators, however, he finds he must scrap it—first, because AH-1s cannot fire the Hellfire fire-and-forget missile (only TOWs) and second, because the AH-1 lacks thermal imaging equipment. This leaves the AH-1 pilots trying to fire a four-kilometer TOW shot, using only night vision goggles, at a camouflaged target that they must find, identify, and track from a helicopter bouncing along barely 50 feet off the ground.

• Attack helicopters equipped with 2.75mm FFARs can fire both direct and indirect fire missions. Normal range for an indirect fire shot is 5 to 6 kilometers. When firing indirect the 2.75mm FFAR is an area weapon with a target box of 200 by 400 meters. These rockets have warheads of various size (most are 10 pounds), and fuze settings that may be changed depending upon the planned target.

Fixed-Wing Attack Aircraft

Planning for such fixed-wing attack aircraft as the A-10, F-18, EF-4, or EF-111 is generally well beyond the scope of an infantry battalion air assault. The best way for the infantry commander to plan the use of these assets, if they are available to provide direct support, is to give the Tactical Air Control Party (TACP) all the information possible and ask how to use them. Once again, however, this is an area in which the professional infantry leader should have at least a passing knowledge of the supporting systems. He should remember that the TACP moves with the infantry and may also become inaccessible when he most needs to contact them.

By planning for SEAD as an integral part of his air assault operation, the infantry leader can help make sure his mission has the best chance of succeeding on the ground because all his assets arrive alive and intact when they reach the LZ. Using the combined arms approach and providing for both flexible and responsive command and control in his SEAD plan, he develops a plan that provides security to his element as well as to the aviation unit. With his thorough knowledge of both threat and friendly weapons, he can develop a realistic risk assessment and plan the measures he can take to lower the risk. For these reasons, the SEAD plan must be an important part of the infantry leader's planning.

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Medical Operations
In a Mechanized Infantry Battalion

LIEUTENANT MICHAEL W. SMITH

One of the most difficult missions on any battlefield is taking care of casualties. The mental and physical stress of battle soon drains a task force of its ability to render treatment quickly and to evacuate casualties from the front line to the battalion aid station.

Unfortunately, the medical platoon in a 1,000-man task force is authorized only 38 men, and only 25 of these deploy forward with the maneuver companies. Furthermore, since the platoon is not always at full strength, medical support in any future conflict will clearly require careful planning and a team effort.

The experiences of one mechanized infantry battalion—the 3d Battalion, 12th Infantry, 1st Armored Division—in preparing for a rotation to the Combat Maneuver Training Center (CMTC) may help other battalions plan their own medical support.

Under the modified tables of organization and equipment, a mechanized infantry battalion's medical platoon is organized into four sections—headquar-

ters, treatment, ambulance, and combat medic (Figure 1).

The headquarters section is responsible for planning and carrying out health service support. The section, with only the medical platoon leader and the platoon sergeant, oversees all logistical, operational, and administrative details within the platoon.

The treatment squad is made up of two trauma treatment teams (each with an M577 vehicle and a 2½-ton truck). Each of these teams is capable of operating independently for as long as 24 hours. The squad is staffed by a physician's assistant and six medics (and, during wartime, a battalion surgeon). It is responsible for providing advanced trauma management for wounded soldiers and logistical support for front-line medics and combat lifesavers (non-medical soldiers who have been trained to provide emergency care as a secondary mission). *(See also "Combat Lifesaver Training," by Lieutenant Kyle C. Campbell, INFANTRY, May-June 1992, pages 38-39.)*

The ambulance section—eight evacuation sergeants, eight medics, eight M113A3 armored ambulances—is responsible for evacuating casualties from the maneuver companies to the battalion aid station (BAS).

The combat medic section—13 medical specialists (MOS 91B)—deploys forward with the front-line companies to provide immediate medical treatment to casualties. The medical platoon leader must decide how to task organize and deploy these assets to support the task force commander's intent.

When the 3d Battalion, 12th Infantry, began planning health service support for the CMTC, staff members knew they would need to position medical assets forward with the companies while retaining the ability to evacuate the wounded to the BAS.

The first step, therefore, was to attach an M113A3 ambulance to each maneuver company to form a company aid post in the company trains. The four remaining medical tracks were kept under platoon control to provide medical support to the scouts, the mortars, and the companies that were expected to have the highest casualties.

The company aid posts operated at company level the same way the battalion aid station operated at battalion level. Casualties were evacuated from the platoons to the aid post, where the senior medic would supervise the reinforcement of treatment, the triage of casualties, and the loading of the wounded for evacuation.

The battalion's standing operating procedures (SOPs) required that each platoon designate a primary vehicle and an alternate vehicle for evacuation. Before deployment, each combat vehicle was provided with a rigid litter to help evacuate casualties safely. The platoon sergeants were required to lead the designated evacuation vehicles on a route reconnaissance to the company trains. The ambulances deployed to the company aid posts with enough medical supplies to operate for 72 hours before needing resupply.

With the ambulances on site to provide continuous medical support to the maneuver companies, the question was How would casualties be evacuated from a company aid post to the BAS? The final solution was that each company would designate one of its 2½-ton trucks in the company trains to be used

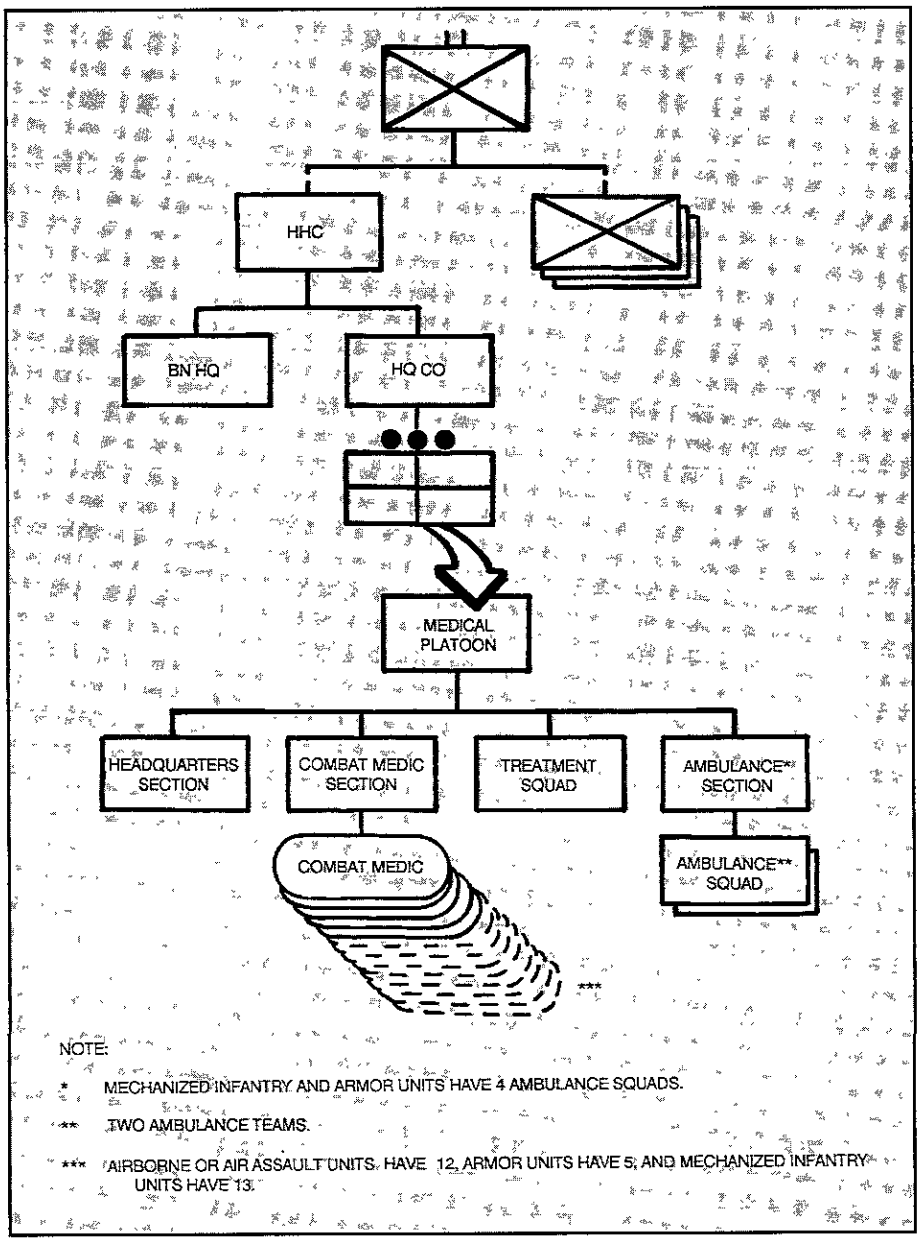

Figure I. Medical platoon, heavy battalion. (Taken from FM 8-10-4.)

only for medical evacuation. The truck, co-located with the company's ambulance, would transport the wounded to the battalion aid station. Evacuation vehicles were required to fly red flags if they carried litter-urgent casualties and yellow flags if they carried chemical casualties. When several vehicles arrived at the same time, these flags helped speed the triage of the wounded.

Battalion SOP required the first sergeants to lead the drivers of these non-standard evacuation vehicles on both primary and alternate routes to the battalion aid station. The drivers put snow chains on their tires to help negotiate the rough, muddy terrain of the CMTC. Some companies also installed radios in their 2½-ton evacuation vehicles so they could maintain communication with the aid station. By cross-stacking litters on the floor of the truck bed and across the troop seats, each company could carry 12 litter patients per trip, as opposed to four in an M113A3 ambulance. Since a company lost all its medical assets each time its ambulance left the company trains, the truck helped tremendously.

The battalion's plan for front-line medical treatment emphasized the use of combat lifesavers. To meet the Army's standard of treating a wounded soldier within five minutes, the battalion began an intensive combat lifesaver training program, and required a certified combat lifesaver on each combat vehicle crew.

The program called for the battalion's combat lifesavers to receive 40 hours of classroom and hands-on training in emergency First Aid, shock management, and intravenous therapy. Because of the high mortality rates among scouts and the independent employment of the battalion mortar platoon, every soldier in MOSs 19D and 11C underwent the one-week battalion-run combat lifesaver program. Soldiers from the S-2 and S-3 sections were also combat lifesaver qualified so they could provide medical coverage for the tactical operations center (TOC).

As a result of this training, combat lifesavers were soon an integral part of casualty management on the front lines.

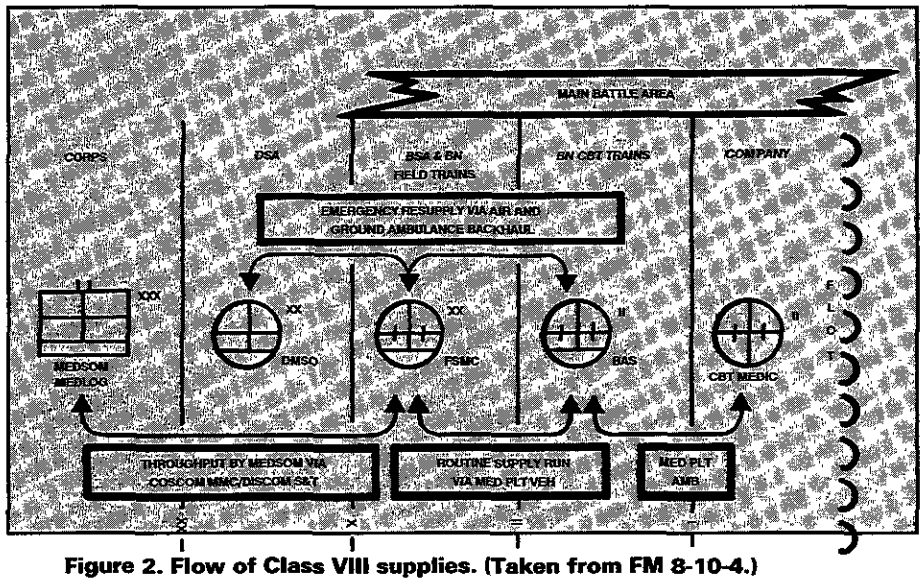

Figure 2. Flow of Class VIII supplies. (Taken from FM 8-10-4.)

With more than 100 trained combat lifesavers in the battalion, soldiers were guaranteed medical treatment from their buddies in the first critical minutes following a wound.

To ensure that a battalion's health service support plan supported the commander's intent, the medical platoon leader must plan the medical portion of the combat service support (CSS) plan. Class VIII medical supplies on the battlefield do not flow the same way as other classes of supply. The division medical supply office in the division rear pushes medical supplies to the medical company in a forward support battalion. The forward support medical company (FSMC) pushes the supplies down to the supported battalion aid stations (Figure 2).

Class VIII resupply on the battlefield is normally conducted by the evacuation vehicles. As non-standard evacuation vehicles transport casualties from companies to the BAS, the company medics send their supply requests with the drivers to the medical supply NCO at the aid station. The evacuation vehicles—restocked with medical supplies—return to their companies to deliver those supplies to the combat medics.

To simplify Class VIII resupply in our battalion, the medical supply NCO acquired several mortar ammunition crates before our deployment. Marking these crates with medical emblems, he packed Alpha boxes (containing assorted field dressings and cravats), Bravo boxes (intravenous solution and IV starter sets), and Charlie boxes (assorted sick-call items and field medical cards). These boxes were equally divided and loaded onto the 2 ½-ton trucks assigned to the trauma teams.

When the BAS was established, the medical supply sergeant positioned these preconfigured push packages along the route the evacuation vehicles used to enter or exit the BAS. As casualties were unloaded, the medical supply sergeant loaded push packages onto the trucks to be taken back to the company aid posts. At the company aid posts, the medics sent medical supplies forward on platoon evacuation vehicles to the combat lifesavers. On subsequent trips to the BAS, the drivers exchanged empty crates for crates of medical supplies.

To refine this plan, the medical platoon leader and platoon sergeant held a series of CSS meetings with key company leaders to discuss the concept of casualty evacuation (CASEVAC) from the battlefield. These meetings were excellent opportunities to chalk-talk and rehearse the CASEVAC plan. After final adjustments, an easy-to-follow medical tactical SOP checklist was developed. Each key leader (in the rank of sergeant and above) and each medic kept a copy of this SOP in his pocket so he could ensure that the medical sup-

port plan was closely followed. To build cohesion, the battalion attached line medics to their companies during the battalion's gunnery training several weeks before the rotation to the CMTC. For four weeks, the medics lived and trained with the soldiers they would support.

After months of preparation, the 3d Battalion deployed into the maneuver "box" at the CMTC. It was time to put the new medical support plan to the test. The company first sergeants were responsible for ensuring that company aid posts were established and that route reconnaissances were conducted. Trauma treatment teams were deployed as far forward as the tactical scenario allowed. During the mock battles—and for several hours after they ended—first sergeants led convoys of non-standard evacuation vehicles to the BAS.

The battalion's emphasis on combat lifesavers also benefited the task force. In simulation the combat training centers average a 90 percent *died-of-wounds* rate for litter-urgent casualties. The medical skills of these combat lifesavers enabled the battalion reduce the *died-of-wounds* rate to 60 percent—still too high, but much better than the average.

During a movement to contact—the most difficult operation to support medically—the combat lifesavers treated casualties spread over the entire battlefield with only an eight percent *died-of-wounds* rate for urgent casualties. These lower rates were attributed to the battalion SOP requirement that all litter-urgent casualties be evacuated before litter and walking wounded casualties. The CMTC rules allow two hours for getting litter-urgent casualties to the BAS before they are listed as *died-of-wounds*, while litter casualties have four hours and walking wounded have 24 hours to reach the BAS.

The battalion's health service support plan succeeded because soldiers wounded on the battlefield received quick and proper medical treatment and prompt evacuation to the battalion aid station. Trauma treatment teams, led by the physician's assistant, provided excellent treatment in stabilizing and resuscitating patients. Using the Class VIII push packages, the medical supply NCO kept the aid posts and the combat lifesavers well stocked with medical supplies.

From this rotation, our battalion learned many lessons and subsequently implemented them:

Medical assets should be positioned as far forward as the tactical scenario permits. A battalion should include a medical support annex to its operations order to ensure that the commanders know the exact locations of all their medical assets. This annex should provide information that includes the positions of medical assets (BAS, split trauma teams, NBC aid station, ambulance exchange points, and FSMC), triggers for moving medical assets, medical task organization, priority of evacuation, MEDEVAC frequencies, and a concept of medical operations (Figure 3).

This matrix is an easy-to-follow guideline for medical support. It is important that first sergeants receive it and rehearse it within the company before a battle. The medical platoon leader must be present when the OPORD is briefed to the commanders, because he is the best qualified person to brief medical support and answer any questions pertaining to the plan.

During the planning phase, the medi-

ANNEX P MEDICAL MATRIX TO OPORD #

ELEMENT/ TRIGGER TO MOVE				
BAS				
TREATMENT TEAM A				
TREATMENT TEAM B				
NBC AID STATION				
AXP'S				
FORWARD SUPPORT MEDICAL COMPANY				

MEDICAL FREQUENCY: _____ MEDICAL CALL SIGN: _____

MEDEVAC (REAL) FREQUENCY: _____ MEDEVAC CALL SIGN: _____

ELEMENT: UNIT RESPONSIBLE FOR EVAC:

SCOUTS: _____
MORTARS: _____
ADA: _____
ENGINEERS: _____
TOC: _____

PRIORITY OF EVACUTION: _____

TASK ORGANIZATION CONCEPT OF EVACUATION:

TEAM ALPHA	
TEAM MECH	
TEAM YANKEE	
TEAM DELTA	
SCOUTS	
4.2	

Figure 3. Medical support annex to operations order.

cal platoon leader must coordinate with other staff officers to ensure that the medical plan supports the mission. He can learn from the S-2's intelligence reports where the enemy is expected to hit the hardest. He can then position additional medical assets with the companies that are expected to suffer the most casualties. From the S-3, he can gain information on the tactical situation, timelines, and follow-on missions.

The medical platoon leader must ensure that he receives copies of all overlays, because the medical teams moving around the battlefield must be made aware of engineer obstacles, minefields, expected avenues of enemy approach, and company battle positions.

In developing the battalion's CSS plan, the medical platoon leader must also work closely with the S-4, who helps by providing information on supply routes and locations for the combat trains. The medical platoon leader must make sure site selections allow for quick evacuation, MEDEVAC landing zones, and avenues into and out of the triage area. He must provide the S-4 with the locations of primary and alternate evacuation routes, ambulance exchange points, BAS locations, and the location of the FSMC so the S-4 can plot this information on the CSS overlay. Coordinating with the chemical officer can help medical planners anticipate chemical attacks, especially in the defense.

In the battalion OPORD, the company closest to the scouts' screen line should be tasked to help evacuate scout casualties. These casualties receive immediate treatment from the combat lifesavers within their platoon. The scout platoon sergeant evacuates the casualties, using scout vehicles, to designated companies, where the casualties become the responsibility of those companies. The TOC and the mortar platoon are responsible for evacuating their casualties to the BAS.

The battalion signal officer (BSO) can provide medical tracks with dual net capability to help the medical platoon disseminate medical support plans. Although the ambulances are authorized only one radio each, they can be equipped with auxiliary radio receivers (RT-442), and the platoon leader's vehicle can be equipped with two radios with secure capabilities. With this dual net capability, the tracked ambulances positioned at company aid posts can monitor the company nets to track the flow of incoming patients and still talk with the battalion aid station. The signal officer can designate one of the battalion's alternate frequencies as the medical platoon internal frequency. With this internal net, the medical platoon can conduct radio rehearsals before each mission without tying up the administrative-logistical net.

PACKING LIST FOR COMBAT LIFESAVER RESUPPLY CHEST

NOMENCLATURE	QUANTITY
Tubing, Non-Metallic Rubber	1
Povidone-Iodine Ointment	5
Ringers Lactate 500-ml	3
Dressing, First Aid, Field	8
Bandage, Muslin Compressed	6
Pad, Povidone-Iodine	8
Intravenous Injection Set	3
Airway, Pharyngeal	1
Catheter and Needle	3
Splint, Universal, 36"x4.5"	1

Medical platoon leaders should also use logistical release points to meet with first sergeants and ensure that they understand the health service support plan. While the companies are being resupplied, the medical platoon leader and the first sergeants can conduct a quick CASEVAC rehearsal.

During the CMTC rotation, our battalion learned that every soldier plays a key role in health service support on the battlefield, and that a strong combat lifesaver program is essential to saving lives. The battalion continues to train non-medical soldiers in the skills they need to stabilize wounded soldiers for evacuation to the battalion aid station. The physician's assistant supports the training by conducting intensive annual recertification classes to ensure that these soldiers maintain their proficiency.

The use of non-standard evacuation vehicles enables medics to stay on site and render medical treatment. Using trucks, the companies can evacuate more casualties each trip. Conducting route reconnaissances before a battle enables the first sergeants to ensure that their wounded quickly reach the aid station.

A strong medical resupply system is crucial to the process of ensuring that company aid posts and combat lifesavers have the supplies they need to provide treatment far forward. The use of preconfigured push packages simplifies the task of getting these supplies where they are needed. This system worked so well in the exercise that the battalion's forward support medical company now stocks the push packages to resupply battalion aid stations. The platoon medical supply NCO now stocks medical supplies in specially marked discarded 25mm ammunition boxes to be stored externally on Bradley fighting vehicles. These boxes hold enough medical supplies to restock each combat lifesaver bag three times (see packing list). Each soldier carries two field dressings in his First Aid pouch to enable the medics and combat lifesavers to bandage both an entrance and an exit wound.

As the battalion's subject matter expert on health service support, the medical platoon leader must be actively involved in the orders process. It is his responsibility to ensure that medical assets are positioned where they are most needed.

Since many medical platoon leaders deploy with an understrength platoon, health service planners may find the CASEVAC plan the most effective means of ensuring that casualties receive prompt medical treatment and evacuation from the battlefield.

Medical support on the battlefield is a difficult mission, but with planning and a dedicated team effort, it is a mission that can be accomplished effectively.

Lieutenant Michael W. Smith was serving as medical platoon leader of the 3d Battalion, 12th Infantry, 1st Armored Division in Germany when he prepared this article. He served in the same capacity during battalion's 1991 CMTC rotation. He has completed the Army Medical Department Officer Basic Course and has also participated in a rotation at the National Training Center.